

REMARKS

The applicant acknowledges with thanks the examiner's indication that claims 22-24 are allowed, and that claim 5 would be allowable if rewritten in independent form. Claims 1-24 are pending in this application. Claims 1, 14, 21, and 22 are independent.

The examiner rejected claim 1-4 and 6-21 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,779,924 to Krames et al., in view of U.S. Patent No. 5,309,001 to Watanabe et al.

As examiner knows, and as stated in MPEP § 2143:

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. (emphasis added).

Additionally, as stated in MPEP §2145.X.D.2:

2. References Cannot Be Combined Where Reference Teaches Away from Their Combination

It is improper to combine references where the references teach away from their combination

More specifically, as was held in *Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc.*, 230 USPQ 416:

A reference should be considered as a whole, and portions arguing against or teaching away from the claimed invention must be considered.

Furthermore, as *In re Gurley*, 31 USPQ2d 1130 (the case law which the examiner relied upon in support of her position in the Office Action) provides:

A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant.

Applicant's independent claim 1 describes a light-emitting diode that includes "a second electrical contact layer comprising a lateral structure by means of which substantially uniform coupling of electrical current into said current-spreading layer can be achieved, said lateral structure comprising a central contact surface that is directly deposited on said current-spreading layer."

Krames, on the other hand, discloses a LED device having a textured interface with an ordered pattern that enhances light extraction through the interface (Abstract). The LED device also includes a substrate 3, a semiconductor epitaxial layer 1 containing an active region 2, and electrical contacts 4 (FIGS. 6-13, and col. 6, line 66 – col. 7, line 10). The examiner admits that "Krames further fails to disclose that the second electrical contact has a lateral structure and provides substantially uniform coupling of the current into the current spreading layer" (page 3 of the Office Action). The examiner, however, argues that Watanabe discloses this feature.

Watanabe is generally directed to a surface electrode having a pad and first order branches that extend from the pad. The surface electrode also has second-order branches extending from the first order branches, and third-order branches diverged and linearly extending from the second-order branches (Abstract).

Although, as the examiner recognized, Watanabe describes that some prior art AlGaInP LEDs that includes a surface electrode 96 composed of a circular pad 98 from which branches linearly extend, as well as a current diffusion layer 94, Watanabe explicitly provides:

The present invention has been developed with a view to substantially solving the above described disadvantages and has for its essential object to provide a light-emitting diode which is capable of improving the external quantum efficiency thereof by relatively reducing ineffective light emission underneath a surface electrode and of emitting shorter-wavelength light efficiently by omitting a current diffusion layer. (emphasis added, col. 2, lines 56-63).

Thus, since Watanabe explicitly precludes using LED devices having an electrode with a lateral structure deposited on a current-spreading layer, as required by applicant's claim 1, a person of ordinary skill reading the Watanabe reference would be led in a direction divergent from the path that was taken by the applicant. Accordingly, neither Krames nor Watanabe provide any motivation for combining these two references.

Since the cited references lack the requisite motivation for combining them, the examiner has thus failed, with respect to independent claim 1, to establish a *prima facie* case of obviousness. Applicant, therefore, considers independent claim 1 to be patentable over the cited art. Claims 2-4, and 6-13 depend from independent claim 1 and are therefore patentable for at least the same reasons as independent claim 1.

Claims 14 and 21 recite similar features to those recited by independent claim 1, and are therefore patentable for at least similar reasons as independent claim 1.

In addition, in rejecting claims 14 under 35 U.S.C. §103(a), the examiner argued that “Watanabe discloses a light emitting diode including ... a circumferential contact web (99 in figure 2, for example)” (page 3 of the Office Action). Applicant respectfully disagrees.

Applicant’s claim 14 describes “wherein said lateral structure comprises a central contact structure and a circumferential contact web arranged about the central contact structure, wherein the central contact structure is directly deposited on said current-spreading layer.”

In contrast, as shown in Watanabe’s FIG. 2, and as disclosed in col. 1, lines 27-30, “the surface electrode 96 is composed of a circular pad 98 for performing wire-bonding, and branches 99a, 99b, 99c, and 99d linearly extending from the pad 98 in four directions.” Thus, the four branches extend radially from the pad 98, and are not connected to each other at any point. Thus, the branches 99a-d of the surface electrode 96 do not form a circumferential web.

Moreover, Watanabe’s preferred embodiments of LED devices also disclose surface electrodes having branches extending from a pad. Those branches extending from the pad of Watanabe’s LED devices also do not form circumferential webs, as required by applicant’s claim 14.

As for Krames, as noted above, Krames’ LED devices include electrical contacts (see FIGS. 6-13). But Krames does not disclose or suggest anywhere electrical contacts that include a lateral structure having a central portion and another portion surrounding the central portion, and Krames certainly does not disclose or suggest “a central contact structure and a circumferential contact web arranged about the central contact structure,” as required by applicant’s claim 14.

Since neither Krames nor Watanabe discloses or suggests, alone or in combination, "wherein said lateral structure comprises a central contact structure and a circumferential contact web arranged about the central contact structure, wherein the central contact structure is directly deposited on said current-spreading layer," applicant's claim 14 is therefore patentable over the cited art.

Claims 15-20 depend from claim 14, and are therefore patentable for at least the same reasons as claim 14.

It is believed that all the rejections and/or objections raised by the examiner have been addressed.

Canceled claims, if any, have been canceled without prejudice or disclaimer.

Any circumstance in which the applicant has (a) addressed certain comments of the examiner does not mean that the applicant concedes other comments of the examiner, (b) made arguments for the patentability of some claims does not mean that there are not other good reasons for patentability of those claims and other claims, or (c) amended or canceled a claim does not mean that the applicant concedes any of the examiner's positions with respect to that claim or other claims.

In view of the foregoing remarks, Applicant respectfully submits that the application is in condition for allowance and such action is respectfully requested at the Examiner's earliest convenience.

Please apply any charges to deposit account 06-1050, referencing attorney docket 12406-022US1.

Respectfully submitted,

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